

WHAT IS CLAIMED IS:

1. An occupant propelled vehicle comprising:
 - a frame, said frame including a front portion and a rear portion;
 - a front wheel provided on said front portion of said frame;
 - a rear wheel provided on said rear portion of said frame;
 - a platform for supporting an occupant, said platform provided between said front and rear portions on said frame;
 - a steering mechanism provided on said frame; and
 - a drive mechanism comprising:
 - a drive sprocket mounted on said rear portion of said frame, said drive sprocket having a central axis and an axle therethrough, said drive sprocket being rotatable with said axle;
 - a driven sprocket provided coaxially with said rear wheel and rotatable therewith;
 - a pedal crank arm, said pedal crank arm having a first end provided on said drive sprocket axle, and a second end having a pedal attached thereto; and
 - an endless chain drivingly provided around said drive sprocket and said driven sprocket, wherein downward force on said pedal and said crank arm rotates said drive sprocket, which drives said driven sprocket and said rear wheel therewith and propels said occupant propelled vehicle in a forward direction.

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2. The occupant propelled vehicle according to claim 1, wherein said drive sprocket is mounted on said frame in a position rearward of said driven sprocket.

3. The occupant propelled vehicle according to claim 1, wherein said pedal crank arm includes an angled member.

4. The occupant propelled vehicle according to claim 1, said occupant propelled vehicle further comprising:

a stationary stop provided on said rear portion of said frame, adjacent said drive sprocket;

a front stop provided on said drive sprocket; and

a rear stop provided on said drive sprocket, wherein said stationary, front and rear stops interact and prevent full rotation of said drive sprocket so that said occupant propelled vehicle is propelled in a forward direction by oscillation of said drive sprocket between positions of said front and rear stops.

5. The occupant propelled vehicle according to claim 4, said occupant propelled vehicle further comprising:

an extension spring, said extension spring including a first end connected to said frame, and a second end connected to and movable with said drive sprocket, wherein said oscillation of said drive sprocket extends and retracts said extension spring so that downward force on said pedal by an occupant rotates said drive sprocket until said rear stop abuts said

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stationary stop, and the return force of said extension spring rotates said drive sprocket in an opposite direction until said front stop abuts said stationary stop.

6. The occupant propelled vehicle according to claim 5, wherein said extension spring is pivotally mounted to said frame.

7. The occupant propelled vehicle according to claim 4, said occupant propelled vehicle further comprising:

a compression spring, said compression spring including a first end connected to said frame, and a second end connected to and movable with said drive sprocket, wherein said oscillation of said drive sprocket compresses and relaxes said compression spring so that downward force on said pedal by an occupant rotates said drive sprocket until said rear stop abuts said stationary stop, and the return force of said compression spring rotates said drive sprocket in an opposite direction until said front stop abuts said stationary stop.

8. The occupant propelled vehicle according to claim 7, wherein said compression spring is pivotally mounted to said frame.

9. An occupant propelled vehicle comprising:

a frame, said frame including a front portion and a rear portion;

a front wheel provided on said front portion of said frame;

a rear wheel provided on said rear portion of said frame;

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a platform for supporting an occupant, said platform provided between said front and rear portions on said frame;

a steering mechanism provided on said frame; and

a drive mechanism comprising:

a drive gear mounted on said frame, said drive gear having a central axis and an axle therethrough, said drive gear being rotatable with said axle;

a driven gear mounted coaxially with said rear wheel and movable therewith;

a pedal crank arm, said pedal crank arm having a first end provided on said drive gear axle, and a second end having a pedal attached thereto; and

an intermediate gear drivingly provided between said drive gear and said driven gear, wherein downward force on said pedal and said crank arm rotate said drive gear, which drives said driven gear and said rear wheel therewith, and propels said occupant propelled vehicle in a forward direction.

10. The occupant propelled vehicle according to claim 9, said occupant propelled vehicle further comprising:

a stationary stop provided on said rear portion of said frame;

a front stop provided on said drive gear; and

a rear stop provided on said drive gear, wherein said stationary, front and rear stops interact and prevent full rotation of said drive gear so that said occupant propelled vehicle

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is propelled in a forward direction by oscillation of said drive gear between positions of said front and rear stops.

11. The occupant propelled vehicle according to claim 10, wherein said pedal is provided on a first side of said drive gear, said front stop is provided in a first position on a second side of said drive gear, and said rear stop is provided in a second position on said second side of said drive gear, so that said drive gear oscillates between a first position in which said rear stop engages said stationary stop and a second position in which said front stop engages said stationary stop.

12. The occupant propelled vehicle according to claim 10, wherein said drive gear oscillates over an arc of between 90° - 100° .

13. The occupant propelled vehicle according to claim 10, wherein said drive gear oscillates over an arc up to 220° .

14. The occupant propelled vehicle according to claim 10, wherein said front and rear stops are positioned on a side of said drive gear between 90° - 100° apart.

15. The occupant propelled vehicle according to claim 10, wherein said front and rear stops are positioned on a side of said drive gear 220° apart.

16. The occupant propelled vehicle according to claim 10, said occupant propelled vehicle further comprising:

a crank housing provided on said frame;

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a torsion spring provided in said crank housing, said torsion spring including a first end connected to said crank housing, and a second end connected to and movable with said drive gear axle, wherein said oscillation of said drive gear tightens and loosens said torsion spring so that downward force on said pedal by an occupant rotates said drive gear until said rear stop abuts said stationary stop, and the return force of said torsion spring rotates said drive gear in an opposite direction until said front stop abuts said stationary stop.

17. The occupant propelled vehicle according to claim 16, wherein said stationary stop is provided on an outer surface of said crank housing.

18. The occupant propelled vehicle according to claim 9, wherein said drive gear is mounted on said frame in a position forward of said driven gear.

19. The occupant propelled vehicle according to claim 9, wherein said drive gear is mounted on said frame in a position above said driven gear.

20. The occupant propelled vehicle according to claim 9, wherein said drive gear is mounted on said frame in a position rearward of said driven gear.

21. The occupant propelled vehicle according to claim 9, wherein said pedal crank arm includes a linear member.

22. The occupant propelled vehicle according to claim 9, wherein said pedal crank arm includes an angled member.

23. The occupant propelled vehicle according to claim 9, said occupant propelled

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vehicle further comprising:

an extension spring, said extension spring including a first end connected to said frame, and a second end connected to and movable with said drive gear, wherein said oscillation of said drive gear extends and retracts said extension spring so that downward force on said pedal by an occupant rotates said drive gear until said rear stop abuts said stationary stop, and the return force of said extension spring rotates said drive gear in an opposite direction until said front stop abuts said stationary stop.

24. The occupant propelled vehicle according to claim 23, wherein said extension spring is pivotally mounted to said frame.

25. The occupant propelled vehicle according to claim 9, said occupant propelled vehicle further comprising:

a compression spring, said compression spring including a first end connected to said frame, and a second end connected to and movable with said drive gear, wherein said oscillation of said drive gear compresses and relaxes said compression spring so that downward force on said pedal by an occupant rotates said drive gear until said rear stop abuts said stationary stop, and the return force of said compression spring rotates said drive gear in an opposite direction until said front stop abuts said stationary stop.

26. The occupant propelled vehicle according to claim 25, wherein said compression spring is pivotally mounted to said frame.

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27. The occupant propelled vehicle according to claim 9, wherein said drive gear comprises a sector gear.

28. An occupant propelled vehicle comprising:

- a frame, said frame including a front portion and a rear portion;
- a front wheel provided on said front portion of said frame;
- a rear wheel provided on said rear portion of said frame;
- a platform for supporting an occupant, said platform provided between said front and rear portions on said frame;
- a steering mechanism provided on said frame; and
- a drive mechanism comprising:
 - a drive gear mounted on said frame, said drive gear having a central axis and an axle therethrough, said drive gear being rotatable with said axle;
 - a driven gear mounted coaxially with said rear wheel and movable therewith, said driven gear drivingly connected to said drive gear; and
 - a pedal crank arm, said pedal crank arm having a first end provided on said drive gear, and a second end having a pedal attached thereto, wherein downward force on said pedal and said crank arm rotate said drive gear, which drives said driven gear and said rear wheel therewith, and propels said occupant propelled vehicle in a forward direction.

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29. The occupant propelled vehicle according to claim 28, wherein said drive gear comprises a sector gear.

30. The occupant propelled vehicle according to claim 28, wherein said drive gear includes internal teeth.

31. The occupant propelled vehicle according to claim 28, wherein said pedal crank arm includes a telescoping portion.

32. The occupant propelled vehicle according to claim 28, said occupant propelled vehicle further comprising:

a stationary stop provided on said rear portion of said frame;

a front stop provided on said drive gear; and

a rear stop provided on said drive gear, wherein said stationary, front and rear stops interact and prevent full rotation of said drive gear so that said occupant propelled vehicle is propelled in a forward direction by oscillation of said drive gear between positions of said front and rear stops.

33. The occupant propelled vehicle according to claim 32, said occupant propelled vehicle further comprising:

an extension spring, said extension spring including a first end connected to said frame, and a second end connected to and movable with said drive gear, wherein said oscillation of said drive gear extends and retracts said extension spring so that downward

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force on said pedal by an occupant rotates said drive gear until said rear stop abuts said stationary stop, and the return force of said extension spring rotates said drive gear in an opposite direction until said front stop abuts said stationary stop.

34. The occupant propelled vehicle according to claim 33, wherein said extension spring is pivotally mounted to said frame.

35. The occupant propelled vehicle according to claim 32, said occupant propelled vehicle further comprising:

a compression spring, said compression spring including a first end connected to said frame, and a second end connected to and movable with said drive gear, wherein said oscillation of said drive gear compresses and relaxes said compression spring so that downward force on said pedal by an occupant rotates said drive gear until said rear stop abuts said stationary stop, and the return force of said compression spring rotates said drive gear in an opposite direction until said front stop abuts said stationary stop.

36. The occupant propelled vehicle according to claim 35, wherein said compression spring is pivotally mounted to said frame.

37. The occupant propelled vehicle according to claim 9, said occupant propelled vehicle further comprising:

a stirrup provided on said pedal.

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38. The occupant propelled vehicle according to claim 10, said occupant propelled vehicle further comprising:

a stirrup provided on said pedal.

39. The occupant propelled vehicle according to claim 16, said occupant propelled vehicle further comprising:

a stirrup provided on said pedal.